3 Sustainable Development

Practicing sound corporate governance is the top priority of sustainability management. Therefore, we continue to develop and improve countermeasures for problems and actively improve the management system to create more fruitful results.

(GRI 2-2、2-9 ~ 2-21、2-26、2-27、201-1、201-4、307-1、418-1、419-1)

SDGs ▶ 8 就業與經濟成長 13 氣候行動

Information on awards received

♦ Corporate Governance Evaluation

Ranked among the top 6 - 20% of the TWSE-listed companies in the 11th Corporate Governance Evaluation

♦ Taiwan Corporate Sustainability Awards

2024 17th Taiwan Corporate Sustainability Awards

1. ESG Report-Platinum Award
2. Integrated Performance Award: Taiwan Top 100 Sustainable Enterprises Award

♦ Taiwan Sustainability Action Awards

CGPC was rewarded at the 4th "Taiwan Sustainability Action Awards"
SDGs 8 Optimization and Improvement of Steam Boilers - Bronze Award

♦ Net-Zero Industrial Competitiveness Excellence Award

CGPC received the "2024 Net-Zero Industrial Competitiveness" Excellence Award in the Petrochemical Industry category.

♦ TRCA Outstanding Award

TVCM received the Outstanding Performance Award from the Taiwan Responsible Care Association (TRCA) for its excellence in the 2023 "Chlorine Gas Emergency Response Joint Drill"

♦ Recognition from the Occupational Safety and Health Administration

CGPC was recognized by the OSHA, receiving the "2024 Outstanding Enterprise in Proactive Disclosure and Evaluation of Occupational Health and Safety Performance in Corporate Sustainability Reports (Publicly disclosed evaluation results of occupational safety and health performance, recognizing the top 10% of outstanding enterprises by capital category)"

3.1 Corporate governance (GRI 2-16)

CGPC values the rights and interests of shareholders, and strictly abides by the relevant regulations on information disclosure, and provides information to shareholders on the Company's financial, business, insider shareholding and corporate governance conditions through the Market Observation Post System or the Company's website. We have established a corporate governance system in order to protect the rights and interests of shareholders and implement equal treatment of shareholders. A corporate governance system in which the shareholders have ful rights to know, participate in and decide on material issues.(Please refer to 2024 Board of Directors' Resolutions).

3.1.1 Transparent information disclosure (GRI 2-9)

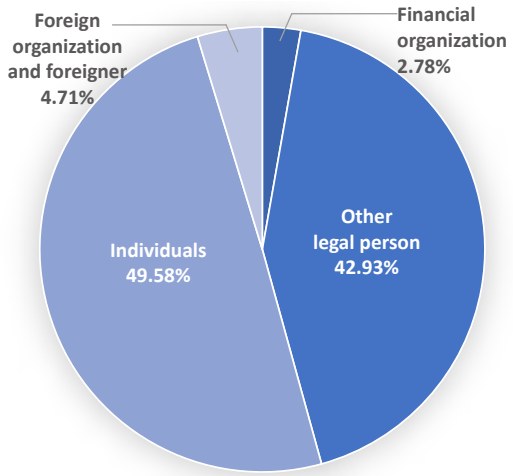
We adhere to the business philosophy of ethics, care, discipline, innovation and trustworthy corporate governance principles. Through our website, the Market Observation Post System, annual report, ESG report, investor conference and other diverse information channels, we disclose the information related to corporate governance, operations, financial statements, institutional investor conferences, the Group's current information, etc. to improve the communication with stakeholders and the speed, quality and credibility of information disclosure.

In 2024, the 4 sessions of institutional investor conferences, annual general meeting and the abovementioned diverse information disclosure channels helped us collect shareholders' opinions which are given to the management team as reference for decision-making. In addition, we value the rights and interests of foreign investors and the globalization of enterprises, and have followed corporate governance evaluation standards to improve the annual report, update information on the MOPS and the Company's website and disclose information in English. We actively establish good two-way communication channels with shareholders through various ways to realize the protection of shareholders' rights and interests.

3.1.2 Information on appointment of the Board and the status of operation (GRI 2-9~2-21)

The Board of Directors is the highest governance body of the Company. CGPC strictly requires all board members to comply with laws and regulations, and to act in accordance with the law as the highest operational principle. GRI 2-17 The term of office of the directors is 3 years and they may be re-elected. The number of independent directors for this term was increased from 3 to 4 and appointed on May 30, 2022. The current Board of Directors consists of 9 senior members from diverse professional fields, with expertise in areas such as operations, finance, law, and environmental protection. Among them are 4 independent directors, including 1 female director, accounting for 44% and 11% of the board, respectively, to enhance gender diversity. To strengthen directors' professional competencies, the Company arranges various annual training programs. In 2024, directors completed 6 hours of internal training and 54 hours of external training. All directors met the training hours required by the "Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE and TPEx Listed Companies," contributing broader perspectives and improving the quality of decision-making. (For details on director training, please refer to the Company's official website)

CGPC's composition of shareholders



As of the closing date of the shareholders' meeting on March 29, 2025

On July 11, 2024, a 3-hour training course was arranged, featuring Kai-Lung Hua, Chief Technology Officer of Microsoft Taiwan, as the keynote speaker. The topic was "Digital Transformation and the Intelligent Future - Applications of Generative AI."

On October 16, 2024, a 3-hour training course was arranged, featuring Dr. Che-Liang Liu from the Chung-Hua Institution for Economic Research as the keynote speaker. The topic was "Carbon Trading Mechanisms and Carbon Management Applications."

With a diverse Board of Directors, the Company is able to assess various proposals from a broader perspective. A total of 5 board meetings were held in 2024, with an in-person attendance rate of 95.24% (100% including proxy attendance). The decisions made covered areas such as business strategies, financial reporting, and internal regulation amendments. Please refer to the Company's website or Annual Report for more information. Please refer to the Company's website or Annual Report. Regarding the process for submitting board meeting proposals, the responsible units, and key resolutions in 2024, please refer to the table below.

Board Members

Term: May 30, 2022 to May 29, 2025

Members:
Directors : Yi-Gui Wu (Chairperson), Han-Fu Lin (Vice Chairperson), Pei-Ji Wu, Han-Tai Liu, Hong-Duo Wu
Independent directors : Tsu-Te Li, Ying-Pin Cheng, Cheng-I Hsu, Chen-Ming Chang (Note)

Gender: 8 male, 1 female

Age : 50 and under	1 person
50 - 59 years old	2 people
60 - 69 years old	2 people
70 and over	4 people

Note: On May 28, 2024, the Company elected Chen-Ming Chang as an independent director in a by-election. Chang brings extensive experience in media relations and design. She previously served as CEO of UC Group and has a strong academic background.

Board of Directors' Resolution Submission Process

Authority and Responsibility unit	Functional committees	Submission to the Board of Directors
Submitting a proposal	Convene conference within the scope of relevant responsibilities. Conduct resolution report, discuss, make resolutions, and prepare minutes of the conference regarding the resolutions' results.	Conduct resolution report, discuss, make resolutions, and prepare minutes of the conference regarding the resolutions' results.

2024 Board of Directors' Important Resolutions (GRI 2-16)

(Please refer to The Company's website or annual report) Furthermore, we set up the "Group Secretary of Board of Directors" as the administrative unit responsible for planning and organizing board meetings. Its role is to enhance the efficiency of board meetings and assist in the implementation of resolutions.

In response to the growing global emphasis on corporate sustainability, the Company aims to further diversify its board by adding members with expertise in relevant fields. This will enhance the Company's sustainability competitiveness and strengthen the overall function of the Board of Directors. Implementation Status of Diversity Policy for Board Members: Please refer to the Company's website or annual report .

3.1.3 Recusal of directors from conflict of interests (GRI 2-9、2-10、2-11、2-15)

The Company places great importance on corporate governance. To ensure the independence and objectivity of Board decision-making, a well-established conflict of interest avoidance mechanism has been implemented, as outlined below:

1. Institutional framework: The Company has formulated clear regulations such as the Rules of Procedures for Board of Directors Meetings, the Code of Ethics and Conduct for Directors and Managers, the Ethical Corporate Management Best Practice Principles, and the Business Integrity Procedures and Behavioral Guidelines. These documents clearly stipulate the measures directors must take to recuse themselves in situations involving conflicts of interest. (Please refer to the Company's website)
2. Meeting procedures: When the Board discusses proposals in which a director has a conflict of interest, recusal procedures are strictly enforced. The meeting chair will remind the relevant directors to leave the meeting. If the chair has a conflict of interest, another director will be appointed to preside over the discussion.
3. Information disclosure: The Board Secretariat will keep detailed records of directors' recusals in each meeting and include the relevant information in the meeting minutes.
4. Annual report: The Company has duly completed the conflict of interest recusal procedures for the Board of Directors in accordance with the law. For further details, please refer to the section "Board Operations" in the Company's Annual Report. For the content of response to conflicts of interest between board members and stakeholders, please refer to "Board of Directors Composition Information", "Top 10 Shareholders" in the 2024 annual report, and "Related Party Transactions" in the 2024 financial report.
5. Continuous improvement: The Company will continue to review and enhance its conflict of interest avoidance mechanism to ensure transparency and fairness in corporate governance.

3.1.4 Status of performance evaluation of committees (GRI 2-18)

2024 Performance Evaluation of the Board of Directors, Individual Directors, and Functional Committees

Established evaluation methods for the performance of the Board, and regularly conducts self-evaluation of the whole Board, individual Board members, and functional committees every year, which is carried out by the Office of the Board Secretary. The results serve as a reference for the Company to review and improve.

The 2024 internal self-assessment performance of the Board as a whole, individual directors, and functional committees is as follows:

Parties Evaluated	Overall Board of Directors	Individual Board Members	Functional Committees		
Aspect of assessment	◆ Participation in the operation of the Company ◆ Improvement of the quality of the Board's decision making ◆ Composition and structure of the Board ◆ Election and continuing education of the directors ◆ Internal control	◆ Understand the objectives and missions of the Company ◆ Understanding of directors' job responsibilities ◆ Participation in the operation of the Company ◆ Internal relationship management and communication ◆ Specialization and continuous education of directors ◆ Internal control	◆ Participation in the operation of the Company ◆ Understanding of the Audit Committee's job responsibilities ◆ Improvement of the quality of the Audit Committee's decision making ◆ Makeup of the Audit Committee and election of members ◆ Internal control	◆ Participation in the operation of the Company ◆ Understanding of Salary and Remuneration Committee's job responsibilities ◆ Improvement of the quality of the Salary and Remuneration Committee's decision making ◆ Makeup of the Salary and Remuneration Committees and election of members	◆ Participation in the operation of the Company ◆ Understanding of the duties of the ESG Committee ◆ Improve the quality of the ESG Committee's decision-making ◆ Sustainable Development Committee composition and membership
Assessment results	Overall, the average score for all aspects of the Board of Directors was over 4.6 points, indicating a positive result.	The average score of all aspects of each director is above 4.7 and the evaluation results are good.	The average score of all aspects of the Audit Committee is 4.8 and the evaluation results are excellent.	The average score of all aspects of the Salary and Remuneration Committee is 4.8, and the evaluation results are excellent.	The average score for all aspects of the ESG Committee reached 4.7 points, indicating a positive overall result.

Note: The evaluation score is expressed in the range of 0 to 5, with a full score of 5. The period being evaluated is from January 1, 2024 to December 31, 2024.
The results of the performance evaluation of the overall Board of Directors, individual directors, and functional committees will be presented to the Board of Directors in the first quarter of 2025.

Recommendations and implementation matters:

In light of the increasing global focus on environmental, social, and governance (ESG) issues, the Company has actively implemented various measures in accordance with the “Sustainable Development Action Plan for Listed Companies (2023)” issued by the Financial Supervisory Commission. Promote the disclosure of greenhouse gas inventory and confirmation information by listed companies in stages, build up the corporate greenhouse gas inventory capabilities. The Company has implemented various measures and the directors have frequently offered valuable insights and recommendations.

In addition to continuously enhancing corporate governance effectiveness, the Company has placed particular emphasis on implementing carbon reduction goals and developing green energy strategies.And through the application of intelligent technology, we can manage in a more efficient way and help enterprises reduce problems and risks. We are carefully planning and executing these initiatives to meet international standards and achieve our ambitious goals for sustainable development.

3.1.5 Corporate Governance Officer (GRI 2-9、2-17)

In order to protect shareholders’ rights and interests of and strengthen the professional competence of the board, the board resolution on May 9, 2019 approved the appointment of the director Yung-Chih Chen of legal affairs holding the concurrent position as the corporate governance officer in charge of corporate governance-related affairs. Director Yung-Chih Chen has over 20 years of experience as a practicing attorney and nearly 10 years of experience as the head of legal affairs for a publicly listed company. His primary responsibilities include handling matters related to Board and shareholders’ meetings in accordance with the law, preparing minutes for both meetings, assisting directors with onboarding and continuing education, providing necessary information for directors to carry out their duties, supporting directors in legal compliance, reporting to the Board on the qualification review of independent directors during nomination, appointment, and tenure, as well as managing matters related to changes in Board membership. In 2024, corporate governance officer, Yung-Chih Chen, completed 23 hours of continuing education.(For details, please see the description on the website).

3.1.6 Functional committees (GRI 2-9)

We have established three functional committees under the Board of Directors, the Audit Committee, Salary and Remuneration Committee, and ESG Committee. For details, please visit the website of the respective committees.

Job Title	Name	Audit Committee	Remuneration Committee	ESG Committee
Chairman	Yi-Gui Wu	-	-	Committee Members
Independent director	Tsu-Te Li	Convenor	Committee Members	-
Independent director	Ying-Pin Cheng	Committee Members	Convenor	Committee Chairperson
Independent director	Cheng-Yi Hsu	Committee Members	Committee Members	Committee Members
Independent director	Zhen-Ming Chang	Committee Members	-	Committee Members
President	Chi-Hung Hu	-	-	Vice Committee Chairperson

Note 1: The statistics in this table are as of December 31, 2024.
Note 2: Hu, Chi-Hung EVP of CGPC, took over as President of CGPC and served as the Vice Chairperson of the ESG Committee from April 1, 2024.
Note 3: On May 28, 2024, the shareholders' meeting approved the addition of an independent director: Ms. Chang, Zhen-Ming serves as a member of the Audit Committee and the ESG Committee.

3.1.7 Functions and operations of each functional committee (GRI 2-10、2-19~2-21)

Name of Committee	Responsibilities/Functions	Operation and Communication Status
Audit Committee	◆ Formulation/revision of the internal control system and the supervision of its operation. ◆ Formulation/revision of the procedures for handling material financial and business activities and the supervision of the operation. ◆ Supervision of appointment and resignation of CPAs and their independence. ◆ Appointment and dismissal of financial/accounting/internal audit officers. ◆ Supervision of the appropriateness of financial reports.	1. In order to fully exercise their duties and gain a better understanding of the company's financial reports and financial and business conditions, independent directors engage in separate communication with the auditors and internal audit manager at least once a year, without the presence of other directors or management personnel. 2. Communication between Independent Directors and Accountants/Internal Audit Manager: Date: November 4, 2024 The Audit Committee - 10th meeting of the 3rd Term Attendees: Independent Director : Tsu-Te Li, Ying-Pin Cheng, Zhen-Ming Chang, CPA : Zheng-Jun Qiu Audit Officer : Kang-Nian Chiang. Separate communication matters: **Accountants** 1. Review implementation and conclusion of the 2024 Q3 consolidated financial statements. 2. 2024 annual financial report audit plan and key audit matters. 3. Introduction to IFRS S1 and S2 on Sustainability Disclosure. 4. Overview of Auditing Standard No. 600 "Special Considerations in Audits of Group Financial Statements". 5. Overview of the Carbon Fee Implementation Timeline. **Internal audit supervisor** 1. Implementation status of audit and the results. 2. 2025 audit plan. 3. Schedule of 2024 internal control self-evaluation. Results of communication: No opinions 3. The project secretary of the Audit Committee will report on the operational status of risk management for the year. ◆ For detailed information, please refer to the official website - Audit Committee , Audit Committee's Organizational Regulations.

Name of Committee	Responsibilities/Functions	Operation and Communication Status
Remuneration Committee	◆ Stipulate and regularly review the performance of the directors and managers, as well as the remuneration policies, systems, standards, and structure. ◆ Regularly evaluate and stipulate director and manager remuneration.	1. The current term of office is from June 2, 2022 to May 29, 2025, with a total of 3 members, consisting of all independent directors. 2. The committee convenes a minimum of 2 meetings per year and in 2024, a total of 3 meetings were held, with all committee members achieving a 89% attendance rate. Regarding the operation of this committee, please refer to the Company's website ,annual report, or linked to the Market Observation Post System (MOPS) to research. 3. The Committee regularly reviews (1) the compensation policies, systems, standards, and structures, and (2) the performance evaluations of directors and senior executives. In determining and assessing their compensation, the Committee takes into account multiple factors, including the industry median compensation levels, individual time commitment, scope of responsibilities, achievement of personal goals, compensation for comparable positions, attainment of the Company's short-term and long-term performance targets, and the Company's financial status. All compensation decisions are subject to approval by the Board of Directors. (GRI 2-20) ♦ Salary and Remuneration: Director compensation comprises remuneration, director fees, and business execution expenses. Senior executive compensation includes monthly salary, fixed bonus, year-end bonus, employee remuneration, annual special bonus, retirement benefits and welfare benefits as required by law. The remuneration for directors and employees is governed by the provisions of Article 33 of the company's bylaws.(GRI 2-19) ♦ Total Remuneration Ratio for 2024: 5.25: 1, Total Remuneration Variation Rate: -41.20%. (GRI 2-21) ♦ Performance evaluation: (1) The performance evaluation of directors covers multiple dimensions, including their understanding of the Company's goals and missions, awareness of responsibilities, level of participation in Company operations, management of internal relationships and communication, professional competence and continuing education, and internal control. In addition, separate performance evaluations are conducted for the Sustainable Development Committee. (2) The performance evaluation of senior executives covers financial aspects (operating revenue, operating profit, and pre-tax net income), customer aspects (customer satisfaction, service quality, key market development...), product aspects (brand management, quality innovation...), talent aspects (talent cultivation, potential development...), safety aspects (zero pollution, zero emissions, zero occupational hazards, zero incidents, zero failures), and project aspects (digital transformation, energy conservation and carbon reduction, circular economy, net-zero emissions...), among others. (3) For sustainability performance-linked indicators, the President is required to allocate a weighting of at least 20%, including no less than 5% for climate-related items. Other senior executives are required to allocate no less than 5% to relevant sustainability performance indicators.

Participants	Performance Indicators	Implementation Method (weighting)
President	Financial Performance (50%)	–
	Market and Customers (12%)	–
	Sustainable development performance (38%)	♦ Talent Development Program (7%) ♦ Energy Conservation and Carbon Reduction Performance (7%) ♦ Green Product Development (7%) ♦ Smart Manufacturing Plan (7%) ♦ Occupational Safety and Health (10%)
Senior Executives	Sustainable development performance (10%)	♦ Talent Development Program (5%) ♦ Green Product Development/Energy Conservation and Carbon Reduction (5%)

Note 1: Total Remuneration Ratio: Annual total remuneration of the highest-paid individual in the organization divided by the median annual total remuneration of all employees (excluding the highest-paid individual).
Note 2: Total Remuneration Change Ratio: Percentage increase in the annual total remuneration of the highest-paid individual in the organization divided by the percentage increase in the median annual total remuneration of all employees (excluding the highest-paid individual).

♦ For detailed information, please refer to the official website-Remuneration Committee,Remuneration Committee's Organizational Regulations,, annual report.

Name of Committee	Responsibilities/Functions	Operation and Communication Status
ESG Committee	◆ Formulate sustainable development policy. ◆ Supervise the implementation of strategic planning of sustainable development, annual plan and project plans, and evaluate the status of implementation. ◆ Review the sustainable report. ◆ Report the annual implementation results of sustainable development to the Board every year.	1. The third term of office is from June 2, 2022 to May 29, 2025 and the 5 committee members include Chairperson Yi-Gui Wu, President Chi-Hung Hu, independent directors Ying-Pin Cheng, Cheng-Yi Hsu and Zhen-Ming Chang. 2. The ESG Committee convened three Board meetings in 2024, and the attendance of all committee members in person reached 100%. 3. Report 2024 sustainable development progress and annual sustainability plan to the Board of Directors. ◆ For detailed information, please refer to the CGPC's ESG Area (ESG Committee meeting minutes), ESG Committee's Organizational Regulations.

3.1.8 Implement ethical management (GRI 2-13、2-14、2-15)

Integrity is a core value of CGPC's corporate culture. To promote ethical conduct among employees, the Company has established the "Ethical Corporate Management Best Practice Principles" and the "Business Integrity Procedures and Behavioral Guidelines" in accordance with the "Ethical Corporate Management Best Practice Principles for TWSE/TPEx Listed Companies," prohibiting dishonest conduct. These regulations apply to directors, managers, employees, and actual controllers, and prohibit offering, promising, soliciting, or accepting any improper benefits, as well as any other acts that are dishonest, illegal, or in breach of fiduciary duties. Forms of benefits include money, gifts, commissions, positions, services, privileges, and rebates. Both directors and the President have signed declarations, and employees are required to comply with the Company's business integrity policy.

To strengthen ethical management practices, the Company has assigned the Corporate Governance Team to formulate and oversee the implementation of the ethical management policy and preventive measures. The Corporate Governance officer reports to the Board of Directors on a regular basis (at least once a year), with the most recent report on ethical management delivered on November 4, 2024. (For detailed information, please refer to the official website)

Professional ethics

Establish systems

CGPC has established the business philosophy of ethics. care, discipline and innovation, and formulated code of conduct for business activities, such as the "Ethical Corporate Management Best Practice Principles", the "Procedures for Business Integrity Practices and Guidelines for Conduct", the "Directors and Managerial Officers' Ethical Behavior Guidelines", and the "Part-Time Employee Code of Conduct". These standards apply to everyone who conduct business activities on behalf of the Company, including the employees, management, directors and members of subsidiaries. The contents include the prohibition of unethical behaviors and conducting bribery or receiving bribery, recusal from conflict of interests, the prohibition of leaking business opportunities, insider trading, improper charitable donations or sponsorships or illegal political contributions.

Grievance Unit

CGPC has established several reporting and complaint channels on its official website, including "Contact Us," "Audit Committee's Email," and "Employee Complaint Channel," to receive reports and complaints. The Company has also enacted the "Procedures for Handling Reports of Illegal, Unethical, or Dishonest Conduct," which clearly define the process for whistleblowing.
The procedures and confidentiality mechanisms are clearly defined. A designated unit is responsible for handling reports, ensuring strict confidentiality and protection for whistleblowers, investigators, and the content of the reports. The Company guarantees that whistleblowing employees will not be subject to any improper treatment. External stakeholders may also file complaints via the official website's email channels, which are handled by designated personnel in accordance with established procedures.

Implementation Status

CGPC adheres to the Ethical Corporate Management Best Practice Principles, and all employees are required to comply with the relevant rules and policies. Through the ERP system, relevant personnel can access necessary information in real time, allowing for the reflection of operational performance. Based on risk assessments, the Company formulates standard operating procedures in line with its policies. Internal control self-assessments are conducted to review regulatory compliance, employee ethics, and risk evaluation, thereby reinforcing self-monitoring.
There were no reports or complaints related to integrity in 2024.

Note: ERP (Enterprise Resource Planning).

Promotion education

To deepen employees' understanding of professional ethics, CGPC not only publishes relevant standards on its corporate website but also continuously invites well-known scholars, experts, or lawyers to conduct training and awareness sessions for directors, managers, employees, and substantial controllers. These efforts ensure that all parties fully understand the Company's commitment to ethical corporate management, related policies, preventive measures, and the consequences of unethical behavior.

To enhance employees' awareness of integrity and reinforce an ethical corporate culture, the Company held multiple internal ethics seminars in 2024, with a total of 313 participants and 714 cumulative training hours. Learning outcomes were further strengthened through testing. Details are as follows:

Item	2024 Ethics Seminar - Course Name	Course Hours	Total number of people	Training Total hours
1	Supervisors' Awareness of Workplace Misconduct Prevention	2	81	162
2	Workplace Ethics: Stop, Look, and Listen	2	40	80
3	Strict Product Liability	2	101	202
4	Insider trading practical case study and related legal responsibilities	3	86	258
5	Regulations and Case Analysis of Fair Trade Act	3	2	6
6	Legal Awareness in the Smart Era and Countermeasures	2	2	4
7	Preventing Workplace Misconduct and Violations	2	1	2
	Total		313	714

Note: This table presents the statistics for CGPC, TVCM, CGPCP, and GGTC, excluding training information for directors and the Corporate Governance Officer.

Ethics Seminar Training Activities

5/23/2024 [Ethical Seminar] Supervisors' Awareness of Workplace Misconduct Prevention

7/16/2024 [Ethical Seminar] Workplace Ethics: Stop, Look, and Listen

8/1/2024 [Ethics seminars] Strict Product Liability

3.1.9 Intellectual property rights management plan

In order to enhance the Company's industrial status and maintain the existing technological achievements, we integrate intellectual property rights with operations objectives and R&D resources. It is expected that the establishment of the Company's intellectual property management system can improve the Company's competitive advantage in the industry and obtain higher benefits through high-value products and services (using the PDCA cycle to construct an intellectual property management system).

Report on the annual implementation status of intellectual property rights:

The "2024 Intellectual Property Management Implementation Status and 2025 R&D Plan" was submitted to the Board of Directors for approval on November 4, 2024. (For details, please see the description on the website)

3.2 Operating performance (GRI 2-2、201-1、201-4、3-3)

In order to enable shareholders and investors to obtain more on-time and accurate information of CGPC when carrying out investment decisions, the information on the monthly revenue release, quarterly financial reports, annual general meetings and institutional investor conference, is made available in the "Investor Services" section of the Company's website or the MOPS. Shareholders and investors can also contact the spokesperson or acting spokesperson by phone, or use the "Contact Us" on the Company's website and the USI Group's "Contact Us" on its website to submit any questions and suggestions, and all opinions will be handled by dedicated personnel.

Material issue: Economic performance

Main target : SDG 8.2, Secondary target : SDG 9.2

The Significance and Impact of CGPC

It is the foundation of the Company's sustainable development, enabling shareholders to obtain reasonable return on investment and the Company to have sufficient resources to take care of employees. The Company also creates mutually beneficial and win-win relationships with clients, suppliers, and collaborating partners to facilitate the growth of both the society and the Company.
Affected Parties: Directly impacts the Company and its employees; indirectly affects investors, customers, and suppliers.

Develop Strategy

Improve product value, provide customers with satisfactory service quality, and maintain stable profits and sustainable development of the enterprise.

Policy Commitment

Implement corporate governance and environmental protection measures for energy conservation and carbon reduction to create a workplace of wellness.

Grievance Unit

President's Office

SASB Indicator

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Major issues in 2024

Poor market conditions - oversupply and low demand. Please refer to the explanation of Responding to Stakeholders.

Indicator Item	Short-, Mid-, and Long-Term Goal Planning	Achievement Status
Risk management	Short-term: Focus on immediate financial risks and market volatility to ensure liquidity. Mid-term: Adjust business models to maintain competitive advantage and ensure agility in responding to challenges. Long-term: Continuously monitor changes in laws and regulations to ensure corporate compliance, and assess the potential impact of policy changes on business operations.	Through a comprehensive risk management mechanism, the Company strictly controls vari ous risks and conducts regular risk assessments and improvements to maintain a stable and sound operational model.

Note: The global petrochemical industry has been impacted by price-cutting competition from China. In coordination with the Group's overall indicator integration, CGPC has adjusted its material topic indicators based on practical operational considerations. (For details, please refer to Sections 3.2 and 3.3)

Exceeded Target | Achievement | Partially achieved | Not met

Operational performance:

CGPC faces challenges including the global economic slowdown, overcapacity in China, and rising raw material costs, which have led to a decline in PVC and VCM product sales. Operating Strategy for 2025: In response to market challenges, CGPC will actively adjust its business strategy by focusing on the development of high-value-added products and environmentally friendly materials. By continuously promoting process improvements and intelligent applications, the Company aims to enhance efficiency and reduce costs to strengthen competitiveness. At the same time, we will actively expand into emerging markets such as India and Vietnam and seek regional price gap opportunities arising from trade barriers. CGPC is committed to business transformation and restructuring in order to achieve sustainable operations. We will continue to implement occupational safety and environmental protection measures, fulfill our social responsibilities, and create long-term value together with all stakeholders. For detailed information, please refer to the 2024 Annual Report: Message to Shareholders and Business Report.

2024 earnings per share(NTD -1.22)

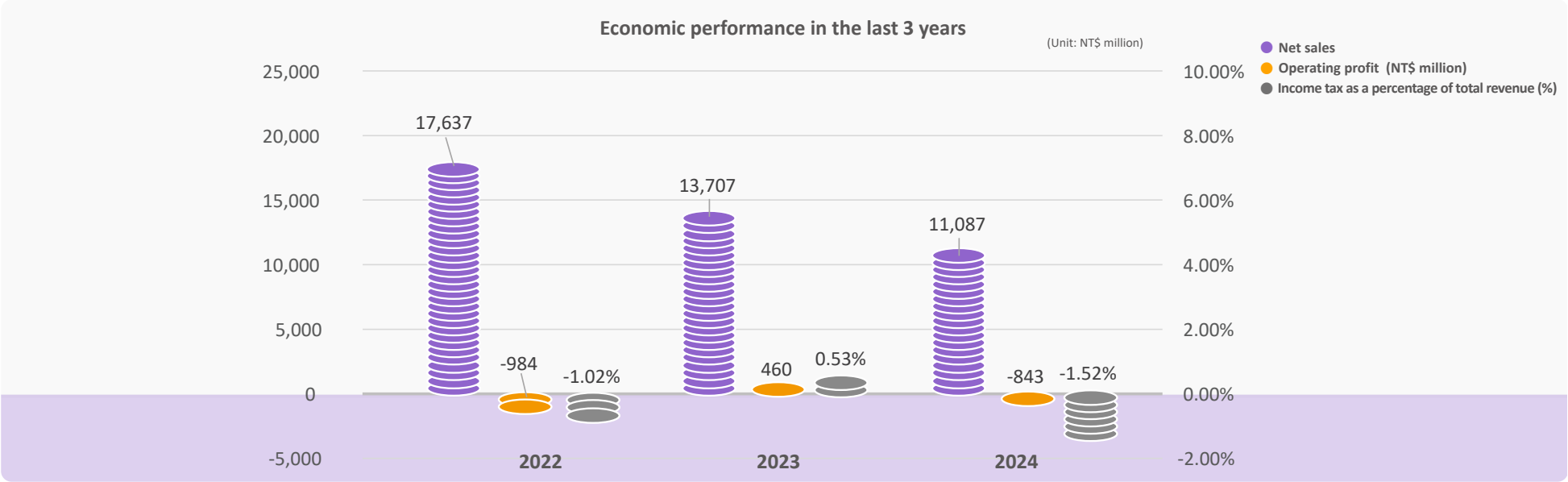
(Unit: NT$)

Item	Amount (NTD million)	Budget Achievement rate	Compared to the same period last year (NTD million)
Consolidated Net sales	11,087	72%	-2,620
Consolidated net operating profit (loss)	-843	-94%	-1,303
Consolidated profit (loss) after tax	-751	-104%	-1,145
Consolidated net loss after tax attributable to the Company's owners	-710	-105%	-1,052

Sales volume of each product in 2023 (10,000 tons)

Product	Production volume (10,000 tons)	Sales volume (10,000 tons)	Budget Achievement Rate
VCM	31.9	34.0	73%
PVC resin	30.0	27.6	73%
Chemicals(100% concentration meter)	6.3	5.8	111%
Fabricated products Building materials products Tape products Rubber Products (10,000 yards)	1.7 1.7 467	1.7 1.6 471	81% 69% 83%

3.2.1 Economic performance (net sales and operating profit)



Note 1: Adopted the International Financial Reporting Standards (IFRS) recognized by the Financial Supervisory Commission starting 2014.
Note 2: The relevant financial information can be found at the MOPS.
Note 3: The operational performance is expressed based on the consolidated financial statements.

3.2.2 Profit distribution

1. Dividend policy stipulated in the Company's Articles of Incorporation: please refer to the explanation in Article 33.
2. Proposal to distribute cash dividends at the Shareholders' Meeting:
   For the distribution of 2024 profit, the Board proposed to distribute cash dividends of NT$ 0.15 per share, which would be subject to the approval by the resolution of the annual general meeting held on May 27, 2025, before being carried out in accordance with the regulations. (For details, see the official website - Material Information)

- As the Company is in a mature industry, the distribution of profits takes into account the needs of research, development, and business diversification, and the shareholder dividends shall not be less than 10% of the distributable profits for the current year, of which cash dividends shall not be less than 10% of all dividends.
  However, if the annual distributable profit per share is less than NT$0.1, it shall no distribution be made.

3.2.3 The revenue and dividend distribution in the last 3 years are as follows (excluding subsidiaries)

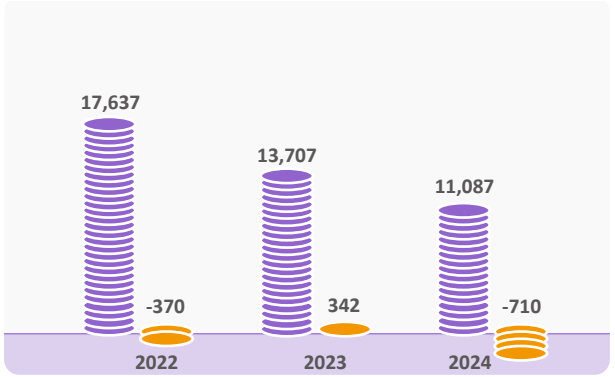
(Unit: NT$ million)

Item	2022	2023	2024
Operating revenue	17,637	13,707	11,087
Earnings after tax	-370	342	-710
Earnings after tax per share (NT$/Share)	-0.64	0.59	-1.22
Dividends distribution (Including cash and stock dividends)	174	203	87
Cash dividends per share (NT$/Share)	0.30	0.35	0.15
Stock dividends per share (NT$/Share)	0	0	0
Total Dividends distribution (%)	-47	59	-12
Price/Earnings Ratio	-43.80	41.75	-14.22
Price/Dividends Ratio	93.43	70.37	115.67
Cash Dividends Yield(%)	1.07	1.42	0.86

Note: 1 Price-Earnings ratio = Average closing price per share / Earnings per share of the year
Note: 2 Price-Dividends ratio = Average closing price per share / Cash dividends per share of the year
Note: 3 Cash dividends yield = Cash dividend per share / Average closing price per share of the year

Operating revenue and after-tax profit in the last 3 years

(Unit: NT$ million)



3.2.4 Description of direct economic value generated and distributed by the organization

(Unit: NT$ million)

Item	2022	2023	2024
Direct economic value generated			
Net sales revenue	17,637	13,707	11,087
Service revenue	3	3	1
Financial investment revenue	40	58	69
Asset sales revenue	8	17	38
Total	**17,688**	**13,785**	**11,195**
Economic value distributed			
Operating costs	17,028	12,091	10,929
Employee salary and benefits	1,113	1,130	1,060
Payments to funders	201	273	181
Payments to the government			
Income tax	-179	73	-169
Land value tax/House tax/Others	27	26	26
Community investment (including charitable giving)	10	2	7
Total	**18,200**	**13,595**	**12,034**
Economic value retained	**-512**	**190**	**-839**

Note 1: Adopted the International Financial Reporting Standards (IFRS) recognized by the Financial Supervisory Commission starting 2014.
Note 2: The relevant financial information can be found at the MOPS.

3.2.5 2024 Government subsidies

(Unit: NT$ thousand)

Abstract	Amount
Domestic Investment Interest Subsidies.	9,596
Bureau of Labor Insurance, Ministry of Labor	27
Taoyuan-Hsinchu-Miaoli Branch of the Workforce Development Agency, Ministry of Labor	109
Occupational safety and Health Administration, Ministry of Labor	200
Energy Administration, Ministry of Economic Affairs	7,582
International Trade Administration, Ministry of Economic Affairs	953
Total	**18,557**

3.3 Risk Management (GRI 2-9、2-11、2-12、418-1)

CGPC identifies relevant risks that may affect the Company's sustainable development from its daily operations, and formulates relevant management strategies and countermeasures to reduce the possible risks of operational disruption. At present, specific matters or significant risks are identified, evaluated, and screened by each implementation and responsible unit, and relevant plans for corresponding measures are prepared. The Audit Office conducts supervision and follow-up to achieve continuous improvement and PDCA cycle to reinforce risk management practices. The challenges and responses of various risks at this phase are described as follows:

3.3.1 Risk types and countermeasures (GRI 2-9、2-11、2-12)

In order to establish sound risk management within the company, our board of directors ensures effective evaluation and oversight of various existing or potential risks. In December 2020, the board approved the "Risk Management Policies and Procedures." The General Manager's Office provides an annual report to the board on the company's risk management operations, allowing the directors to have a comprehensive understanding of the risks faced by the company. This enables them to provide more specific recommendations regarding the company's operating strategies in a timely manner.

◆ Description of risk management

The ESG Committee conducts analysis based on the principle of materiality of the ESG Report to communicates with internal and external stakeholders, and reviews domestic and foreign research reports and literature and consolidates the evaluation data of various segments and subsidiaries to evaluate the materiality of ESG issues, formulate risk management policies for effective identification, measurement, monitoring and control, and take specific action plans to reduce the impact of related risks. The Audit Committee and the board approved the Risk Management Policy and Procedures" in 2020. The main contents include risk management policies , risk management organization, risk management process, categories and practices, etc., to effectively control the risks arising from business activities, The status of the current year's risk management operations is reported to the Audit Committee and the board at least once a year. Comply with the relevant laws and regulations of the competent authority, formulate the operating standards of each risk management unit, and carry out risk management and control of daily operations. Follow the development of international and domestic risk management systems at all time, review and improve risk management policies accordingly, and continuously adjust and improve the risk management methods in response to changes in the internal and external environment, so as to reinforce the effectiveness of the Company's risk management implementation, and protect the interests of the Company, employees, shareholders and stakeholders.

◆ Risk management identification process

The risk identification process involves each responsible functional department assessing and identifying significant risks based on recent international economic developments, the latest ESG regulations, and risk and opportunity assessment management methods. This ongoing evaluation and rolling revision process ensures that risks are promptly assessed and appropriate adjustments are made. Finally, the results of the identification of significant risks from each department are compiled by the Audit Committee Secretary reports to the members and submits it to the Board of Directors.

◆ Implementation of risk management

The major risks faced in 2024 included a decline in bulk product prices due to overcapacity and weak domestic demand in China; the expectation that major economies may enter a rate-cutting cycle as inflation eases; the slowdown in global economic growth and the accelerated restructuring of supply chains; as well as risks arising from climate change, energy price fluctuations, and changes in greenhouse gas-related policies and regula tions. Upon reviewing operational conditions, all risks were identified and assessed in accordance with the risk management process. Except for a fire incident at the CGPC Toufen main factory's hard fabric workshop, which led to a reassessment of shutdown and startup SOPs and heat transfer oil operation safety, along with the reinforcement of early-warning and safety monitoring systems, all other risks remained within controllable limits. For the operational status of each risk management unit, please refer to the Sustainability (ESG) section - Risk Management Operations.

Risk Governance and Management Units	Operational Oversight Model	Risk Management Categories
The Company's risk management is jointly promoted by the Board of Directors, the Audit Committee, the highest-ranking officers directly responsible for the daily operations of each risk management unit (hereinafter referred to as "senior officers"), the Audit Office, various risk management units, and subsidiaries.	♦ The risk management process includes: risk identification, risk assessment, risk monitoring, risk reporting and disclosure, and risk response. ♦ Each risk management unit must have a thorough understanding of the risks associated with its respective area of responsibility, analyze relevant risks within its scope, and incorporate risk management mechanisms when establishing operational management regulations. Each unit is also responsible for monitoring the risks within its area to ensure that the risk control mechanisms and procedures are effectively implemented. ♦ Supervisory Unit: Senior officers are responsible for overseeing the implementation and coordination of risk management. At least once a year, they must report the status of risk management operations to the Audit Committee's project secretary for review. The Audit Committee is responsible for evaluating the effectiveness of the Company's internal control system to ensure proper implementation and to oversee the management of existing or potential risks. The Board of Directors approves the overall risk management policy and major decisions. ♦ Audit Unit: The Audit Office is responsible for auditing the Company's risk management practices and providing management with timely insights into existing or potential internal control risks, ensuring compliance with established regulations and control procedures.	The risk management policies of the Company and its subsidiaries are aligned with overall business strategies and define various risk categories based on the nature of their operations. The following categories of risk are comprehensively managed: ♦ Financial Risk ♦ Strategic and Operational Risk ♦ Raw Material Price and Supply Chain Risk ♦ Occupational Safety Risk ♦ Information Security Risk ♦ Legal Risk ♦ Human Resources Risk ♦ R&D Risk ♦ Climate Change and Environmental Risk ♦ Disaster and Accident Risk ♦ Technology Risk ♦ Other Risks

3.3.2 Cybersecurity risk management (GRI 2-9, 2-11, 2-12)

We adopt the 「Risk Management Policies and Procedures」 as the standards for the establishment and development, operation, review and continuous improvement of the overall information security management system. We also establish information policies and objectives according to our operating activities and risks to carry out information security management and effectively control risks. For the 2024 security project implementation results, please refer to 4.1.3 Customer Confidential Information Protection, for the personal information protection of education and training, please refer to the company's official website "Integrity Management Operation and Annual Implementation Status"

1 Establish an information security promotion team with the following duties:

- Formulate information security risk management framework and information security policy.
- Conduct information security risk assessment and analysis.
- Information security maintenance and execution.
- Confirmation of the effectiveness of information security operations.

3 Protection of customers' confidential information

- Comply with laws and regulations to formulate relevant standards.
- Personal data de-identification and monitoring of abnormal traffic of network access.
- Reinforce firewall management and authorization control for data access.
- Carry out internal and external information security risk assessment and improvement through external audit.

4 Risk types and countermeasures – Risks and challenges

- Facing the increasingly severe information security attacks, strengthening information security protection without affecting the yield of the production line is a great challenge for information administrators.
- We have referred to industry practices and the advice of information security consultants, and applied the use of firewall equipment to separate the computers of information tasks and the computers of the industrial control operations system. The implementation shows immediate results in preventing damage causes information security incidents.

2 Develop management solutions

Regulations and standards:
- In terms of personal data protection, we follow the European Union's [General Data Protection Regulation (GDPR)].
- In terms of customer data protection, the Group's Information Technology Division has formulated the General Principles of Information Security Management Policy; the System Development and Maintenance Management Standards; the Key Points for Application System Program Online Operations Management; the Key Points of Database Management; the Information System Authorization and Equipment Protection Management and other standards to carry out the care of privacy information in the aspect of information security management.
- Formulate information security related policies, planning, governance, supervision and implementation in accordance with ISO 27001 to ensure the Group's information security protection capabilities and reinforce employees' nformation security awareness.

Information security awareness:
- Regularly hold education, training and promotion sessions
- A professional consulting company is commissioned to perform social engineering drills twice a year.
- Promote the Zero Trust network security protection model.

Defense tools:
- Prudent authorization control, masking and restricting personal data fields to be read.
- Reinforce measures such as firewall management, system vulnerability scanning, operating environment egmentation and de-identification processing.
- Establish network traffic monitoring and analyze potential threats to prevent illegal intrusions or improper disclosure of information.

Information security governance:
- Hold information security management review meetings for the information security management system (ISMS).
- Improve employees' information security awareness and reinforce information security education and training.
- Conduct information security risk assessment and analysis.
- Review information security infrastructure design.
- Continue to obtain ISO 27001 certification every year.

5 Implementation of risk management

Regulations and standards:
- Comply with the EU GDPR regulations to protect personal data.

Audit:
- Internal audits are conducted, twice a year.
- External audit is conducted once a year by a third-party organization.

Information security education and training:
- 4 hours of education and training are performed by information personnel every year.

Strengthen the control of external devices of industrial equipment:
- Restrict USB access to prevent data leakage and external information security hazard attacks from affecting production lines.

Social engineering drills:
- Implemented twice a year.

External storage media health check:
- Implement a comprehensive inspection of external storage media and reduce the risk of data loss and hidden information security hazards from external devices through regular anti-virus scanning, inspection, and inventory.

Vulnerability scanning and detection:
- Regularly perform vulnerability scanning and detection of the server's operating systems to identify potential risks for system correction or propose compensatory measures to improve system security. This is done once a year, and has been implemented continuously for 8 years.

3.3.3 Internal control (GRI 2-26)

Internal audit system

An independent Internal Audit unit has been established under the Board of Directors to assist management in reviewing and evaluating the internal control system and measuring operational effectiveness and efficiency. Based on identified risks, the unit formulates and implements an annual audit plan. The Head of Internal Audit holds a Certified Internal Auditor (CIA) credential and carries out duties with objectivity and integrity. The Head regularly attends Audit Committee and Board meetings to report significant audit findings and follow up on the progress of corrective actions. The Internal Audit unit is the designated department responsible for handling submissions to the Audit Committee's email and reports made through the whistleblower hotline for illegal, unethical, or dishonest conduct. In 2024, the Internal Audit unit carried out its duties in accordance with the annual audit plan, completing 49 audit reports and 5 follow-up reports. All findings and recommended improvements have been addressed. In compliance with the Financial Supervisory Commission's directive (Jin Guan Jheng Shen Zih No. 1130381962, dated April 22, 2024), the Company revised its internal control system to include sustainability information management. The revision was approved by the Audit Committee and the Board of Directors on November 4, 2024, and will take effect starting in 2025.

Five components of internal control are incorporated into daily operations

The president designates the Internal Control Review Task Team to evaluate the effectiveness of internal control and the status of implementation by hierarchy. The Audit Division reviews the findings and issues the Statement of Internal Control showing the compliance with all regulations, which is then submitted to the Audit Committee and the board.

Audit process

1 Risk assessment	Based on the assessment results of overall economic risk, strategic risk, operating risk and financial risk, formulate the annual audit plan to be submitted to the Audit Committee and the board for approval.
2 Implementation	Formulate procedures and scope of audit according to the annual audit plan and conduct audit operations.
3 Audit/ Improvement	Discuss the audit results with the audited units, propose suggestions for improvement and issue audit reports.
4 Submission/ Review	Submit audit reports to the audited units and the management, and forward them to independent directors for review.
5 Follow-up	Follow up the status of improvement plans for the audited units every quarter.
6 Period report	Regularly report the implementation status of annual audit plans to the Audit Committee and the Board.
7 Report	Regularly report audit works to the competent authority in accordance with laws and regulations.

Three objectives of internal control

- Results and performance of the Company's operations
- Reliability, timeliness, transparency and compliance of reporting
- Compliance with relevant laws and regulations

3.4 Regulatory Compliance (GRI 2-27、307-1、419-1)

CGPC strictly requires employees, supervisors at all levels and members of the board to abide by laws and regulations, and act in accordance with the law as the operating principle. In terms of regulatory compliance, we follow changes in relevant domestic and foreign laws and regulations that affect the Company's operations, and hold training courses related to laws and regulations from time to time. We also actively participate in the dissemination of information on laws and regulations, ethical management and corporate social responsibility courses and seminars organized by the competent authority. The Company defines a material event in accordance with the "Procedures for Verification and Disclosure of Material Information by Listed Companies." Any single event resulting in a cumulative fine of NTD 1 million or more is deemed a material event and will be disclosed with specific details in the relevant section of this report.

Environmental protection

CGPC is committed to the pursuing a safer work environment and complies with important government and international industrial safety, labor health and environmental protection regulations and promote the ISO 14001, ISO 45001 and other management systems to ensure that the Company's daily operations have minimal impact on the community. We also conduct active communication to understand employees and local residents and other key stakeholders and then propose solutions for improvement.In 2024, TVCM had no violations resulting in fines. However, CGPC and CGPCP were penalized for violations related to certain regulated items (see table). For details on corrective actions, please refer to CH5.4 Air Pollution Control.

Occupational safety

CGPC has established an occupational safety and health management system in compliance with the law. It actively reviews the causes of accidents, reduces hazards and prevents their recurrence. In the event of an incident, immediate response measures are taken, and care for employees is provided. In 2024, there were no violation-related fines imposed on TVCM or CGPCP. However, CGPC experienced two fire incidents. The competent authority imposed two fines under the Fire Services Act and one under the Air Pollution Control Act, totaling NTD 1.05 million (NTD 600,000 for fire safety violations and NTD 450,000 for air pollution violations). An additional fine of NTD 300,000 was issued as a follow-up administrative penalty for non-compliant facilities identified during post-incident inspections. For details on related measures and responses, please refer to Section 6.4: Safe and Healthy Workplace

Product, service and customer relationship

We spare no efforts in providing customers with satisfactory services, and hope to establish long-term partnerships with customers. In 2024, we did not receive complaints about violating customer privacy and losing customer information nor have there been any violations, fines or penalties related to products and services.
Please refer to 4.1 Customer service management

Labor and human rights

We abide by relevant labor laws and regulations, protect the legal rights of employees and respect the principles of basic human rights recognized internationally. We also have formulated relevant standards and work policies to protect workers' basic labor rights. In 2024, we did not violations of relevant labor laws and regulations. Please refer to website 或 6.2.3 Human Rights and Protection

♦ Number of Regulatory Violations and Fines in 2023 and 2024

In light of increasingly stringent regulatory compliance requirements and penalty standards, the Company continues to promote improvement measures to further reduce the number of violations and the amount of fines imposed (as outlined below).

◇ Social Aspect: 0 cases in 2023; 2 cases in 2024, both involving CGPC with a total fine of NTD 900 thousand. (Total amount NTD 900 thousand)

◇ Environmental Aspect: In 2023, there were 6 cases. TVCM had 2 cases with fines totaling NTD 226 thousand, and CGPCP had 4 cases with fines totaling NTD 212 thousand. (Total amount: NTD 438.2 thousand); In 2024, there were 6 cases. CGPC had 1 case with a fine of NTD 450 thousand, TVCM had 2 cases with fines totaling NTD 200 thousand, and CGPCP had 3 cases with fines totaling NTD 610 thousand (total amount: NTD 1,260 thousand)

♦ Description of Major Events in 2024:

Two fire incidents occurred at CGPC's Toufen main factory in 2024. The competent authorities determined violations of the Air Pollution Control Act and the Fire Services Act, resulting in a fine of NTD 1.05 million. Relevant announcements were published on the Company's website on October 19, November 9, and December 26, 2024. Following the incidents, a site inspection by the fire department identified certain facilities as non-compliant with regulations, leading to an additional administrative fine of NTD 300 thousand. This penalty was a follow-up administrative disposition and was not related to the cause of the fires. For detailed information, please refer to CH6.4 Safe and Healthy Workplace - 2024 Fire Incidents and Response Measures.

3.5 Technology Research and Development (GRI 3-3)

Guided by the principles of sustainable materials, green manufacturing, circular economy, net-zero emissions, and continuous innovation, CGPC's R&D department is committed to optimizing production processes to reduce energy consumption and greenhouse gas emissions. The Company promotes green manufacturing by ensuring that environmentally friendly plastics meet market demands for durability, safety, and functionality, thereby achieving a balance between environmental responsibility and practical application.

Material issue: Technological R & D

Main target : SDG 12.4, Secondary target : SDG 9.5, 12.5

The Significance and Impact of CGPC

With a focus on innovation and resource optimization, CGPC is dedicated to developing a green supply chain, prioritizing environmental safety and energy conservation. Innovation extends beyond products to include upgrades in technology and service models, with R&D efforts closely aligned with market demands and customer feedback.
Affected Parties: Government agencies, employees, investors, and suppliers.

Develop Strategy

Foster knowledge integration and information sharing between R&D, sales, and manufacturing departments to ensure seamless coordination across all processes. Optimize the use of R&D resources through more rational allocation and utilization. Reduce uncertainty in product development.

Policy Commitment

Adhere to legal and ethical standards by carefully evaluating the social, environmental, and consumer impacts of each new product and technology. Provide a better working environment to retain talent and maintain organizational vitality.

Grievance Unit

Processing Technology Section, Processing R&D Department

SASB Indicator

- RT-CH-410a.1

Indicator items	Unit	2024 goal	2024 result	2025 goal	2027 goal	2030 goal
New Product development	Number of development projects	7	15	10	10	12

Note: The global petrochemical industry has been impacted by price-cutting competition from China. In coordination with the Group's overall indicator integration, CGPC has adjusted its material topic indicators based on practical operational considerations.

Exceeded Target | Achievement | Partially achieved | Not met

3.5.1 R&D expenditure in the last 3 years

(Unit: NT$ thousand)

Year	Funding
2022	72,479
2023	72,928
2024	50,590

Note: The amount of R&D expenditure includes Taiwan and overseas subsidiaries.

Promotion projects

- **New patent applications have been submitted:**
  1. Recyclable Synthetic Leather Structure (M630391) : The patent for this structure was granted in August 2022.
  2. New Slow Temperature Rising Leather Structure (M631078) : The patent for this structure was granted in September 2022.
  3. Scratch and Stain Resistant Leather Structure (M636680) :The patent for this structure was granted in January 2023.
  4. Anti-Viral Coating Structure for Eyewear (M630340) : The patent for this structure was granted in January 2023.
  5. Antibacterial and anti-mildew layer structure(M645877) : The patent for this structure was granted in September 2023.
  6. Application of light-transmitting layer structure and its luminous decoration (M657916), license obtained in July 2024.
- **Added a PVC pilot reactor to the 30L pilot plant, and completed in 2022. The applications are as follows:**
  1. Research of PVC resin formula and manufacturing process improvement (such as conversion rate, formula, etc.).
  2. Evaluation of new raw materials and countermeasures (such as specific gravity and others).
  3. Discuss root causes of quality issues and make improvements (such as thermal stability improvement etc.), and develop new products with market competitiveness.
- **Benefits:**
  1. Evaluation of optimized raw materials and incorporate advanced testing capabilities for countermeasures to reduce the testing time.
  2. Optimize manufacturing process parameters and adjust advanced testing capabilities.
  3. Develop ultra-high polymerization powder, ultra-low polymerization powder, high B.D powder and high CPA powder to enhance market competitiveness.
- A total of 26 new products was developed in last two years, including car floor mats and wiring harnesses Tape cloth products, automobile, motorcycle and bus seat rubber and other products, please refer to the website description.

Circular economy - Products developed with the latest curing technology (antibacterial function)

Solution: Use natural marine biological shell powder to replace chemical antibacterial agents

Description of promotion:

CGPC, in response to sustainable development and circular economy issues, has utilized technological methods and creative ideas through its research and development team. By leveraging the antibacterial properties of calcined marine bio-shell powder and innovative approaches, the company gradually replaces the use of chemical synthetic antibacterial agents with natural non-toxic marine bio-shell powder. This is applied in plastic-related products, creating a circular economy and contributing to environmental protection. We adopt the latest curing technology to add natural shell powder to resin to be applied to the surface of plastics, which can pass the mold resistance testing (ASTM G21) and antibacterial test (JIS Z-2801).

Note 1: PS1 - Mold resistance testing (ASTM G21) includes testing against Aspergillus niger, Chaetomium globosum, Trichoderma viride, Penicillium funiculosum, and Aureobasidium pullulans.

Note 2: PS2 - Antibacterial testing (JIS Z-2801) includes testing against Staphylococcus aureus and Escherichia coli.

We highly value the sustainable development of ESG. While pursuing sustainable operation and profit, our three core strategies of sustainable vision "R&D and innovation," "stable operation" and "social inclusion" are to co-create value with stakeholders to improve our competitive advantage of sustainable development.

R&D and Innovation Goals and Benefits:

Goals :

Sustainable Development Goals: In the future, we will continue to plan and develop new green and eco-friendly antibacterial products, use nano and compound materials, etc. to develop products with diverse antibacterial effects. We will grasp market trends, understand customer needs, and improve the our long-term competitive advantage.

Benefits :

Our R&D team follows global trends, and is committed to meeting the Company's goals in circular economy, reduction of waste and environmental protection. The breakthrough technology research and development can improve morale, demonstrate the Company's contribution to environmental protection, enhance corporate image, make the business more competitive, and win the trust of customers.

Develop “Chroma cool” in response to climate change

Solution: Chroma cool

Description of promotion:

In extreme climates, the duration of hot weather can be longer than the number of cold days, we have developed a new type of "Chroma cool," which can be used for motorcycle seat cushions and outdoor sports equipment. The products are available in various colors. Compared with traditional leather, they can reduce the temperature by 10 to 20 degrees, which is a great benefit for motorcyclists and sports enthusiasts.

Implementation Status:

We have been actively marketing and pursuing a strong market presence, resulting in a cumulative sales volume of 30,188 yards in 2024.

Patent:

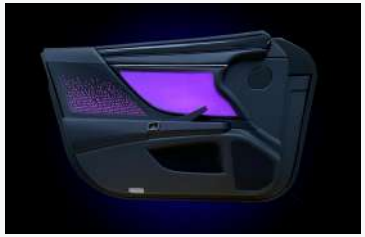
Obtained the patent for new invention no.M631078 in 2022.

Benefits:

It is estimated that market demand will continue to rise in the future. In response to market changes, the future goal is to continue to improve other functions and enhance market competitiveness.

3.5.2 New products to be developed

- ♦ Translucent leather/cloth products
- ♦ PVC/TPE rubber solvent-free surface-treated
- ♦ TPO anti-static transparent film
- ♦ Development of solvent-free TPE paste cloth
- ♦ TPE single-material rubber
- ♦ TPO apron
- ♦ PVC printing banner leather
- ♦ TPO peelable leather
- ♦ PVC cooling peelable leather
- ♦ PE/CBC easy-tear adhesive fabric tape
- ♦ PVC low-smoke flame-retardant leather
- ♦ Antibacterial and anti-mildew tubing
- ♦ TPU treadmill belt/conveyor belt
- ♦ PVC conductive leather
- ♦TPO vacuum cushion leather



♦ Translucent leather/cloth products

3.5.3 Overview of technology and research and development

Newly-developed technologies or products

1. Newly-developed Technologies

1.1 30L PVC overlapping experiment

1.2 PVC Powder Moisture Intelligent Monitoring

1.3 Research and analysis of PVC pink color difference

1.4. GRS Global Recycling System Certification

♦ Fully Recyclable TPO Shoe leather

♦ TPO Car Floor Mats

♦ Antiviral leather

2. Newly-developed products

2.1 Virus-resistant door panels	2.8 POE fish-electricity symbiotic water pond fabric	2.15 Tour bus car seats and soft leather upholstery	2.22 TPO leather for baby car safety seats
2.2 Japan's Tape fabric for marking lines	2.9 PP equipment telescopic protective cover fabric	2.16 Motorcycle seat rubber	2.23 TPO cutting board
2.3 Wire harness tape fabric	2.10 Silica gel coating/film lamination products	2.17 Car seats and soft leather upholstery	2.24 TPE car seat rubber
2.4 Easy-cut edge banding tape for door panels	2.11 POE waterproof membrane/pool liner	2.18 Development of soft leather for furniture	2.25 TPO Anti-slip leather
2.5 High softening temperature automotive floor mats	2.12 Soft leather with a slippery feel for marine use	2.19 Development of benzene-free/ solvent-free PVC paste cloth	2.26 TPO fully recycled shoe rubber
2.6 Antiviral rigid adhesive tapes	2.13 Casting products	2.20 Antiviral rubber sheet (medical bed)	
2.7 TPO automotive console/floor mat	2.14 Truck seats and soft leather upholstery	2.21 GRS certified TPU foam	

Sales of newly-developed products

In response to climate change and various functional market demands, we have improved the added value of products and market share. We have also developed non-PVC rubber products that comply with environmental regulations, meet the needs of domestic and foreign manufacturers that adopt the green concept, and expand to new markets that demand value-added products.

Product category	Product item	2024 Sales target (tonnes/thousand yards)	2024 Sales quantity (tonnes/thousand yards)	2024 Sales revenue (NT$ thousand)	Achieved?	The proportion of each new product to the revenue of the product category (%)
Rubber products	PVC rubber	200.0	282.5	33,994	Yes	4.6%
	TPE eco-friendly material	120.0	30.0	5,297	No	0.8%
Total sales of 2024 new products		**320.0**	**312.5**	**39,291**		5.4%

Note 1: New products are defined as those within 2 years of the successful development.
Note 2: Reason for not achieving the TPE target: Due to rising prices of imported raw materials and shrinking market demand, consumers remain cautious about eco-friendly materials, making it difficult to break through current barriers in promoting and selling such products.

R&D plans in recent years

(NT$ thousand)

2025 R&D plans	R&D expenses needed to be committed again
Development of benzene-free/solvent-free PVC paste cloth	500
Development of benzene-free/solvent-free TPE paste cloth	300
TPU treadmill belt/conveyor belt	500
PVC electrical tape for water-based adhesive	500
PVC conductive leather	300
TPO vacuum cushion leather	400
PVC low-smoke flame-retardant leather	300
PP sheet for mechanical masking	500
Translucent leather/cloth products	600
TPO anti-static transparent film	500
PVC inkjet fabric	500
Non-PVC inkjet fabric	800
TPO peelable leather	400
PVC cooling peelable leather	300
Oyster shell powder door panel (antibacterial and anti-mold)	300
Oyster shell powder pipe (antibacterial and anti-mold)	500
Development of 3rd-generation soil-resistant rubber	500
Development of synthetic casting soft leather for furniture	1,000
SEMI PU semi-finished product development	500
Semi-rigid printing product development	500
Earth fabric tape plasticizer transition	500
*Low-VOC PVC/TPE leather	15,000
PVC/TPE rubber solvent-free surface treatment	1,000
PP hard fabric for home furnishings	500
Non-PVC tape fabric	500
30L test tank new formula	300
Total	**27,500**

Green products

Media mentioning the significant environmental impact of PVC materials (the negative impact of plasticizers on the environmental hormones and heavy metals). In fact, the advancement of technological research and development and the selection of new varieties of plasticizers and stabilizers have been eliminating the impact of environmental hormones and heavy metals. The use of non-PVC materials (TPE/TPU) by the processing industry has gradually developed green products that can be used in daily life.

PVC products meeting new regulatory requirements

The products sold by CGPC comply with the EU Restriction of Hazardous Substances Directive (RoHS for short) and the requirements of the Substances of Very High Concern (SVHC) listed in the EU REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), the EU Toy Safety Directive EN-71-3, the Proposition 65 of California, USA , California's The Safer Consumer Products Regulations, etc. We have the strategic planning for the new green R&D mindset (non-toxicity) that meets regulatory requirements and successfully incorporated the abovementioned standards into our operations to develop new products that can reduce environmental impact.

Non-PVC products

We have researched and tested non-PVC synthetic leather and cloth products, and successfully developed and continued to promote PVC materials alternatives that meet the requirements of environmental protection regulations and have relevant physical properties to meet market needs. CGPC actively develops differentiated products inhouse, and offers high-performance POE, TPE, TPU and other plastics to produce more eco-friendly non-PVC leather fabrics to meet the needs of domestic and foreign manufacturers that adopt the green concept, and expand to new markets that demand value-added products. The varieties and applications of successfully sold products have gradually expanded. The product examples are as follows:

- Eco-friendly waterproof materials (no phthalate, no heavy metals, for breeding and water storage purposes)
- Eco-friendly exhaust pipe (heat-resistant, conductive)
- Eco-friendly furniture (used in sofas, seats, bicycle seat cushions)
- Eco-friendly shoe materials (applied to functional sneakers)
- Eco-friendly bags (applied to various slip-resistant functional parts)

3.6 Intelligent Management (GRI 3-3)

The Company continues to pursue smart manufacturing as its goal and actively promotes digital transformation. By optimizing processes and management efficiency, the Company enhances overall operational performance in response to industry changes and market competition, aiming to achieve highly efficient, intelligent, and sustainable operations.

Material issue: Intelligent Management

Main target : SDG 9.4, Secondary target : SDG7.3

The Significance and Impact of CGPC

Improve equipment efficiency, and reduce the impact of production on the environment as much as possible in order to achieve the eco-friendly goals of low pollution and low energy consumption.
Affected parties: employees, community residents, government agencies, customers, suppliers/contractors, investors.

Develop Strategy

Renovation and replacement of old equipment and Improve equipment efficiency in order to achieve the eco-friendly goals of low pollution and low energy consumption.

Policy Commitment

Enhancing Operational Safety, Reducing Accidents, Minimizing, Resource Consumption, Building an Intelligent Factory.

Grievance Unit

Processing Technology Section, Processing R&D Department

SASB Indicator

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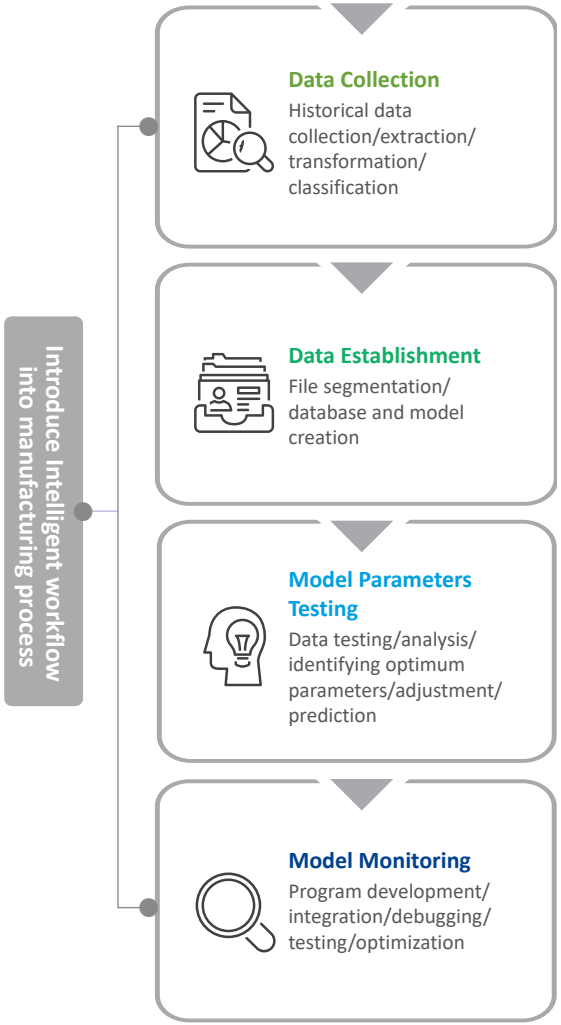
Indicator items	Unit	2024 goal	2024 result	2025 goal	2027 goal	2030 goal
Introducing Intelligent Manufacturing Process	Number of projects	3	4	4	4	5
AIOT Intelligence Manufacturing	Number of projects	3	3	3	3	3

Exceeded Target | Achievement | Partially achieved | Not met



2024 Objective

Establishment of an intelligent control model

- By establishing an intelligent control model for a single chlorine distillation column, the process can quickly reach optimal energy consumption conditions, resulting in improved stability and enhanced energy-saving performance.
- Image recognition (AOI) combined with multiple equipment and processes within the facility allows us to monitor and alert operators to ensure a safe working environment.

2024 Performance

Intelligent monitoring to create a safe operating environment for energy conservation and carbon reduction.

- By utilizing intelligent models to provide optimal set points (SP) and applying model-based optimization control, the process can quickly reach optimal energy consumption conditions. This enhances process stability and achieves energy-saving benefits, and has been implemented in the unit chlorine distillation column.
- Establish a model to monitor heat exchanger efficiency and provide recommendations on when to switch to backup units, thereby reducing energy consumption and lowering carbon emissions.
- Introduction of the intelligent image recognition for smart weighing scales and tank truck loading, we can monitor and alert operators in the workflow, creating a safe operating environment.
- By introducing the situation room and production management system at the Toufen main factory, most information can be monitored in real time to establish production management indicators. Based on the needs of each unit, various indicators are listed, relevant variables and corresponding management countermeasures are formulated, and intelligent functions are integrated to optimize production management.
- By using intelligent models to identify the optimal set points (SP) from past operations and to automatically calculate real-time optimal PID parameters through control loop optimization, the system can automatically assign process conditions and PID parameters via programming. This enhances process stability and reduces steam consumption per unit, achieving energy-saving benefits. This approach has been implemented in the PVC dryer.
- A license plate recognition system has been introduced to manage and control the entry and exit of vehicles within the plant.

2025 Objective

Parallel promotion of intelligentization projects

- Through industry-academia collaboration, intelligentization was introduced to a single chlorine distillation column. By utilizing intelligent models to provide optimal set points (SP) and applying model-based optimization control, the process can quickly reach optimal energy consumption conditions, enhancing stability and achieving energy-saving benefits. The solution was then replicated and applied in-house to three chlorine distillation columns.
- Based on historical operating data, models are established to define corresponding normal operating ranges and control boundaries. Process equipment is monitored, and alarms are triggered in case of abnormalities, enabling personnel to take preventive actions in advance and maintain control. This helps reduce process and safety anomalies and also lowers energy consumption.
- An AOI detection and alarm system has been established in the second and third tank truck loading/unloading areas. Using image recognition technology, the system monitors the safety behavior of operators and provides warnings. Infrared cameras are also used to detect gas leaks and abnormal temperatures, creating a safer working environment.
- By using intelligent models to identify optimal process conditions from historical data and to optimize control loops for the best PID parameters, the process can maintain stable production and quality while reducing steam consumption per unit in the evaporation tank.
- A tank truck unloading image recognition system has been implemented to monitor operator procedures during unloading operations. The system detects any deviation from the SOP and issues real-time alerts, helping to establish standardized workflows and a safe working environment.
- A smoke detection system has been introduced to monitor chimney emissions within the plant. It checks whether emissions are occurring and whether the smoke color is within the appropriate range. In case of improper emissions, management personnel are notified immediately to coordinate with production units for early response and resolution.

2026 Objective

Build smart factories

- New CCTV cameras have been installed, and electronic fences have been added to existing cameras in the plant to monitor personnel movements in high-risk operations or restricted access areas. This ensures that operating zones remain clear or that personnel are present at their designated positions.
- By collecting long-term vibration data from critical equipment, maintenance schedules can be predicted in advance. Anomaly detection models are established for real-time comparison and monitoring, with unified display screens showing monitoring data. Personnel can view equipment status directly through the monitoring interface, reducing the workload of on-site inspections and the cost of performing maintenance on a fixed schedule. Model-based diagnostics help reduce the occurrence of abnormalities, enhance energy efficiency, and improve industrial safety.

2030 Objective

Enhanced intelligence

- In the future, with the introduction of intelligent systems and smart learning control, AIoT technology will bring new vitality to traditional industries. In terms of hardware and software, technological integration enables intelligent monitoring and automated control, effectively improving production efficiency. Through energy management systems, energy use can be maximized while minimizing environmental impact. For safety enhancement, intelligent monitoring systems provide real-time hazard detection and offer rapid and accurate emergency responses.
- The upgrade to smart manufacturing not only strengthens hardware-software integration and enhances safety protection, but also accelerates the transformation of traditional industries toward a low-carbon future, supporting energy conservation and carbon reduction goals and contributing to environmental sustainability.

Various projects towards the promotion of smart factories

Establishment of a intelligent factory

1. Process optimization & safety monitoring
- Distillation Column Systems of TVCM
- Each PVC drying system of CGPC (Utilizes intelligent models to provide optimal program settings (SP) and by intelligent control optimization which allow us to rapidly achieve the best energy consumption conditions).
- Absorption tower process safety monitoring
- CGPC Alkali-chlorine evaporation tank system

2. AOI image recognition
- Electrical Panel AOI with Thermal Imaging
- intelligent Safety System for Stackers
- Image Recognition for Tanker Truck Loading Operations
- Fabricated plant product defect identification system
- Pipe AOI Image Detection System
- Intelligent weighbridge system and license plate AOI image recognition

3. Intelligence factory
- Situation Room at Main Plant
- Polymerzation production management system
- Alkali-Chlorine Manufacturing Management System
- CGPC Automatic Warehousing System
- Energy Efficiency Performance Management Platform

Sustainable Management through Industry-Academia Collaboration

- Providing Intelligent Education Scholarships
- Sharing Practical Experiences in Industry- Academia Collaboration (Please refer to the section on High Quality Intelligent-based Transition)

ESG Benefits

- Energy Conservation, Carbon Reduction, Environmental Protection
- Stable Quality, Economic Prosperity
- Reducing the Probability of occupational Accidents

Process optimization - the planning progress and benefit description of the distillation column

Chung Yuan Christian University Industry-Academia Cooperation

Phase 1: Best operating conditions
Phase 2: Control optimization
Phase 3: Intelligent process monitoring and process maintenance

Process optimization

TVCM 6102 Distillation column
- Phase 1 — Completed
- Phase 2 — Completed
- Phase 3 — 2025/08/31

6101 Intelligent implementon in distillation column (Phase 1)
Description of benefits in 2024:
- Steam saved: 1,713 (tons)
- Energy saving rate: 1.40 (%)
- Carbon reduction: 221 (tons)
- Savings: NT$1,713 (thousand)

6102 Intelligent implementon in distillation column (Phase 1&2)
Description of benefits in 2024:
- Steam saved: 512 (tons)
- Energy saving rate: 0.87 (%)
- Carbon reduction: 66 (tons)
- Savings: NT$512 (thousand)

6203 Intelligent implementon in distillation column (Phase 1)
Description of benefits in 2024:
- Steam saved: 1,920 (tons)
- Energy saving rate: 0.87(%)
- Carbon reduction: 248 (tons)
- Savings: NT$1,920 (thousand)

Introduced by TVCM

TVCM 6101 Distillation column
- Phase 1 — Completed
- Phase 2 — 2025/06/30

TVCM 6203 Distillation column
- Phase 2 — Completed

TVCM 6202 Distillation column
- Phase 1 — Completed

Project Benefits

- Process operation consistency: Improve the inconsistency of manual operation control of the distillation column.
- Intelligent control: AI-based steam calculation and automatic control of backflow make process control more stable.
- In 2024, the unit steam consumption of the 6101 distillation column was reduced by 1.4%.
- In 2024, the unit steam consumption of the 6203 distillation column was reduced by 0.87%.

Note: 1. The average unit price of steam is NT$1,000/ton 2. The average carbon emission coefficient of steam: 0.129 tons CO_2e/ton, 3. The carbon fee is estimated at NT$300 per ton.

Process optimization - dryer planning progress and benefit description

Chung Yuan Christian University Industry-Academia Cooperation

Phase 1: Best operating conditions
Phase 2: Intelligent control
Phase 3: Product moisture control design

Process optimization

- **CGPC #5 Dryer**
  - Phase 1 — Completed
  - Phase 2 — Completed
  - Phase 3 — 2025/08/31

#5 dryer Intelligent implementon (Phase 1 and 2)
Description of benefits in 2024:
- Steam saved: **868** (tons)
- Carbon reduction: **135** (tons)
- Carbon reduction rate: **9.4** (%)
- Savings: **NT$ 977** (thousand)

Introduced by CGPC

- **CGPC #6 Dryer**
  - Phase 1 — Completed
  - Phase 2 — 2025/02/28
- **CGPC #7 Dryer**
  - Phase 1 — Completed
  - Phase 2 — Completed
  - Phase 3 — 2025/12/31

#7 dryer Intelligent implementon (Phase 1 and 2)
Description of benefits in 2024:
- Steam saved: **1,767** (tons)
- Carbon reduction: **226** (tons)
- Carbon reduction rate: **19.0**(%)
- Savings: **NT$ 1,908** (thousand)

- **CGPCP Dryer** — Phase 1 — Completed
- **CGPC #3 Dryer** — Phase 1 — 2025/12/31
- **CGPC #4 Dryer** — Phase 1 — 2025/06/30
- **Alkali chlorine evaporation tank** — Phase 1 — 2026/06/30

Project Benefits

- Intelligent control: Overall improvement of the mean deviation (SP set value) by 31.19%.
- Process operation consistency: Improve the instability of slip feeding conditions and the inconsistency of artificial control.
- In 2023, the #5 dryer can save steam consumption by 5.7%.
- Reduces steam consumption by 17.7% at maximum capacity.
- In 2024, the #7 dryer can save steam consumption by 19.0%.

Note: 1. The average unit price of steam is NT$1,080/ton 2. The average carbon emission coefficient of steam: 0.128 tons CO_2e/ton, 3. The carbon fee is estimated at NT$300 per ton.